



SST-W100 Wi-Fi Thermostat

Quick Reference Guide

The Savant Wireless Thermostat (SST-W100) is a Wi-Fi® enabled digital thermostat designed to control a Heating, Ventilation and Air Conditioning (HVAC) system. Use this document as a reference when opening, installing, powering, and connecting to a local wireless network. Once connected, the SST-W100 can join the Savant Control system. For more information on configuring the thermostat, refer to the *SST-W100 Deployment Guide (009-0802-xx)* and *SST-W100 User Guide (009-0957-xx)*. All documents can be found on the [Savant Portal](#).

Box Contents

- (1) SST-W100 Thermostat
- (1) Quick Reference Guide (this document)
- (1) Installation Kit
 - (2) Drywall Anchors
 - (2) #6 x ¾ in self tapping screws
- (1) Wire Labels (Sheet of wire label stickers)

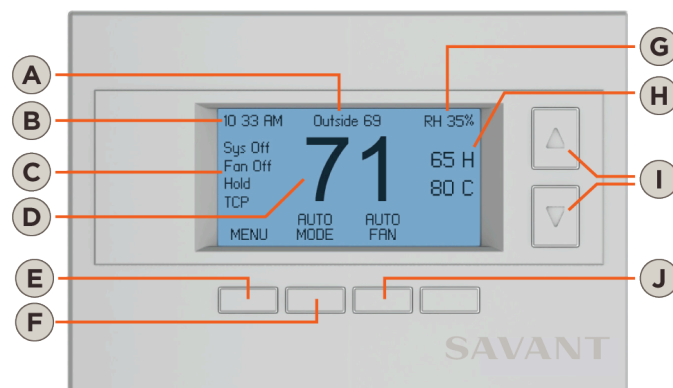
Optional Components

- SST-TEMP1-xx - Remote Indoor Temperature Sensor
- SST-OTEMP1-xx - Remote Outdoor Temperature Sensor

Specifications

Environmental	
Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% Relative Humidity (non-condensing)
Dimensions with Faceplate	
Height	3.96 in (10.06 cm)
Width	5.775 in (14.67 cm)
Depth	0.58 in (1.47 cm)
Weight	Net - 0.5 lb (0.23 kg) Shipping - 2.0 lb (0.91 kg)
Power	
Supply	24V AC. Connect to terminals 24C and 24RH on terminal block on back panel. Note: Requires both R and C from HVAC system.
Max. current draw	200 mA
Cable Requirements	
Power	#18 AWG
HVAC	#18 AWG Thermostat Wire (solid)
Remote Sensors	#24 AWG (Cat 5) 500 feet (152 m) maximum
Compliance	
Safety and Emissions	FCC Part 15 UL Class 2 For more details, refer to the Regulatory section
RoHS	Compliant
Wi-Fi®	
IEEE	802.11 b/g
Security	WPA1™, WPA2™, WPA1™ + WPA2™, Ad hoc, Open
Connections	
Two 8-position screw down connectors mounted to inside of back panel. Each terminal is marked. Refer to table for a description of each terminal.	
Minimum Supported Release	
Savant OS	da Vinci 5.2

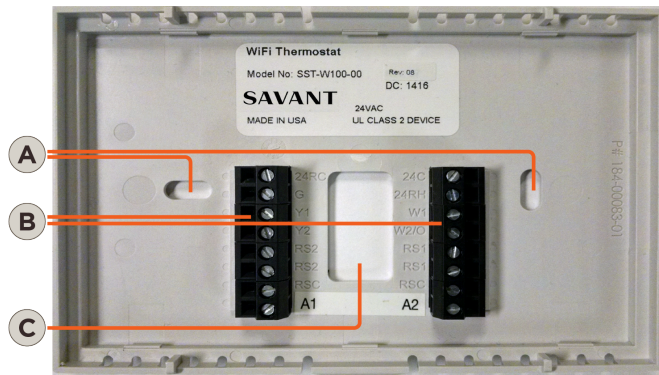
Front View



Each of the buttons are multipurpose buttons. The function of each button changes depending on the screen currently displayed. The information below describes the main screen shown above.

A	The Outside temperature displayed is retrieved from the remote sensor RS2 when configured as an outdoor sensor.
B	Displays local time. The time is set through the MENU button.
C	The status of the HVAC system is displayed here. From the image above: <ul style="list-style-type: none"> • HVAC system is Off • Fan is Off • Hold indicates there is no schedule running • TCP is being used to communicate with the Wi-Fi network.
D	The temperature displayed is the local indoor temperature
E	Pressing the MENU button for the first time opens the SET CLOCK menu. Once the clock is set, pressing the menu button will open the main menu.
F	MODE button selects Off , Heating , Cooling , or Auto . Heat Mode controls a heating system, Cool Mode controls a cooling system, and AUTO Mode controls both.
G	The Relative humidity displayed is retrieved from a humidity sensor that is internal to the SST-W100.
H	The high and low setpoints are displayed. To modify each, press the up/down arrow button to the right of each setpoint.
I	The up/down arrow buttons are multipurpose buttons. In the screen shown, pressing the up or down arrow button will open the high and low setpoint windows. In other windows, the buttons are used to move up and down a list of items.
J	Fan Mode can be changed between On , Auto , and Cycle . Select the correct mode for your HVAC system.

Rear Panel



A

Mounting Slots - The SST-W100 comes with wall anchors and screws to mount to an existing wall. Place the back panel on the wall and mark where the wall anchors are to be installed.

B

Terminal Blocks - All wiring is connected to one of the two terminal blocks. Refer to table below for a brief description of each position.

C

Wire Slot - This rectangular slot is where the wires coming from the HVAC system and/or remote sensors are fed into the thermostat.

Terminal Block Connections

24RC	Connect the 24V AC hot wire from the transformer on HVAC system to the 24RC terminal. When there is a separate heating and cooling system, the wire from the transformer on the cooling system is wired here. **See Note below.	24C	Connect the common wire from the transformer on HVAC system to the 24C terminal. When there is a separate heating and cooling system transformer, the common wire from the cooling system is wired here.
G	Connect to the fan terminal on the HVAC system.	24RH	When there is a separate heating and cooling system, the wire from the transformer on the heating system is wired here. **See Note below.
Y1	Connect to the 1st stage cooling terminal on the HVAC system	W1	Connect to 1st stage heating terminal on the HVAC system.
Y2	Connect to the 2nd stage cooling terminal on the HVAC system	W2/O	Connect to 2nd stage heating terminal on the HVAC system. If the system is a Heat Pump type system, connect to the changeover terminal (O).
RS2	Remote Sensor 2 - Connect to remote temperature sensor RS2. No polarity is observed.	RS1	Remote Sensor 1 - Connect to remote temperature sensor RS1. No polarity is observed.
RS2	Remote Sensor 2 - Connect to remote temperature sensor RS2. No polarity is observed.	RS1	Remote Sensor 1 - Connect to remote temperature sensor RS1. No polarity is observed.
RSC	If there is a shield on the cable that connects to remote sensor RS2, connect that shield to the RSC terminal.	RSC	If there is a shield on the cable that connects to remote sensor RS1, connect that shield to the RSC terminal.
A1	<ul style="list-style-type: none"> Auxiliary Relay 1 can turn external equipment such as a humidifier, dehumidifier, and external vent damper on and off. Auxiliary Relay 1 can be turned on and off according to workflows and triggers set up in RacePoint Blueprint. Can also be used to control the speed of an external dehumidification fan when using an air handler for dehumidification. 	A2	<ul style="list-style-type: none"> Auxiliary Relay 2 can turn external equipment such as a humidifier, dehumidifier and external vent damper on and off. Auxiliary Relay 1 can be turned on and off according to workflows and triggers set up in RacePoint Blueprint.

****Note:** When connecting the power wires to the thermostat, if there is a separate transformer for the cooling and heating systems, the transformer from the cooling system gets wired to the **24RC** terminal and the transformer from the heating system gets wired to **24RH** terminal. In this scenario, jumper **JP1** located on the PCB circuit board must be cut to separate the **24RH** and **24RC** terminals. Failure to cut this jumper could result in damage to the circuit board when powering the system.

Install Thermostat

The SST-W100 can be mounted to an existing wall. Position the thermostat on an interior wall that is away from direct sunlight or any heating ducts or radiators. If replacing an existing thermostat, prior to removing the old thermostat, switch off power to the heating and/or cooling system. During the removal process, it is good practice to label each wire removed with the reference designator marked on the old thermostat being removed. Follow the instructions below to install the SST-W100 thermostat.

1. Separate the thermostat from its rear mounting plate by grasping the top and bottom of the rear mounting plate in one hand and top and bottom of the thermostat in the other hand. Pull halves apart by rocking the top and bottom of each half until they separate.
2. Position the rear mounting plate onto the wall where the thermostat will be located. Verify that writing next to each 8-position terminal block can be read. If not, the rear panel is upside down.
3. With a pencil, mark the two slots in the rear mounting plate onto the wall.
4. Drill a ¼ inch hole on each mark.
5. Insert the wall anchor into the holes drilled and using a #2 screwdriver rotate the anchor into the wall using a gentle forward pressure until the anchor is flush with wall.
6. Place the thermostat base onto the wall. Pull the wires out through the center cutout located between the two terminal blocks. Screw the rear mounting plate to the wall using the #6 x ¾ in self tapping screws supplied.

The wiring diagrams below display a few wiring configurations. For additional wiring diagrams, refer to the [*SST-W100 Wireless Thermostat Deployment Guide \(009-0802-xx\)*](#) on the Savant Portal.

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On single transformer HVAC systems, connect power between 24RC and 24C terminals. 24RC and 24RH are shorted together through JP1 on the PCB circuit board. Cut JP1 if there is a separate transformer for cooling and heating.

PCB Terminal Block:

- Cooling 24V AC
 - Fan
 - Compressor Stage 1
 - Compressor Stage 2
 - Remote Sensor 2
 - Remote Sensor 2
 - Not Used
 - Aux Relay 1
- 24RC
 - G
 - Y1
 - Y2
 - RS2
 - RS2
 - RSC
 - A1
- 24C
 - 24V AC Common
 - Heating 24V AC
 - Heat Stage 1
 - Heat Stage 2
 - Remote Sensor 1
 - Remote Sensor 1
 - Not Used
 - Aux Relay 2
- 24RH
 - W1
 - W2/O
 - RS1
 - RS1
 - RSC
 - A2

Jumper JP1: Connects 24RC and 24C.

External Equipment (1): Dehumidifier, Humidifier, Vent Damper.

Furnace: W1 (Heat Stage 1), W2 (Heat Stage 2), G (Fan Relay), C.

Air Conditioner: R, C, Y1 (Compressor Stage 1), Y2 (Compressor Stage 2).

24V AC Transformer: Connected to the furnace and the air conditioner.

In the single stage heat pump system shown below, connect power between the 24RC and 24C terminals.

Jumper JP1

Terminal	Label
24RC	Cooling 24V AC
G	Fan
Y1	Compressor Stage 1
Y2	Compressor Stage 2
RS2	Remote Sensor 2
RS2	Remote Sensor 2
RSC	Not Used
A1	Aux Relay 1
24C	24V AC Common
24RH	Heating 24V AC
W1	Heat Stage 1
W2/O	ChangeOver Valve
RS1	Remote Sensor 1
RS1	Remote Sensor 1
RSC	Not Used
A2	Aux Relay 2

Indoor Air Handler

- R
- G
- C

Heat Pump

- C
- Y1
- Y2
- O

24V AC

Fan Relay

1st Stage Compressor

2nd Stage Compressor

Reversing Valve

In the two stage heat pump system shown below, connect power between the 24RC and 24C terminals.

Jumper JP1

Cooling 24V AC	24RC	24C	24V AC Common
Fan	G	24RH	Heating 24V AC
Compressor Stage 1	Y1	W1	Heat Stage 1
Compressor Stage 2	Y2	W2/O	ChangeOver Valve
Remote Sensor 2	RS2	RS1	Remote Sensor 1
Remote Sensor 2	RS2	RS1	Remote Sensor 1
Not Used	RSC	RSC	Not Used
Aux Relay 1	A1	A2	Aux Relay 2

Indoor Air Handler

Heat Pump

Remote Sensors

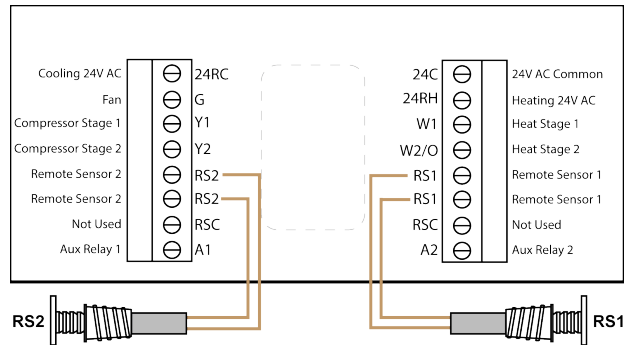
The SST-W100 supports connecting up to two remote temperature sensors (SST-TEMP1 and/or SST-OTEMP1). These sensors are wired to the SST-W100 using #24 AWG Cat 5 cable. The table below displays the configurations supported through software. Refer to the [SST-W100 Wireless Thermostat Deployment Guide \(009-0802-xx\)](#) connecting each of the sensors.

Sensor Descriptions

Internal Sensor - The thermostat has an internal temperature sensor mounted on the PCB circuit board.

RS1 (Remote Sensor 1) - RS1 is hardwired to the terminal block on back panel and is typically mounted in a location away from the thermostat. The RS1 connection is for internal/indoor (SST-TEMP1) use only and when attached, this disables the internal sensor. RS1 cannot be configured for outdoor use.

RS2 (Remote Sensor 2) - This sensor is hardwired to the terminal block on back panel of the SST-W100 and can be used as either an internal/indoor (SST-TEMP1) or external/outdoor (SST-OTEMP1) sensor.



Connect to a Local Wireless Network

The SST-W100 integrates into the Savant Control system through the local wireless network. The SST-W100 can connect to a wireless network through a few different methods. The information below describes how to join a wireless network using the SSID of the network. The remaining methods are described in the [SST-W100 Wireless Thermostat Deployment Guide \(009-0802-xx\)](#). Click the link in [Additional Information](#) section below.

1. Press any button on front panel of the SST-W100 to light up LCD for viewing.
 2. Press the **MENU** button from the lower left side of the display.
 3. From the **Menu Selection** screen, scroll to the **Wi-Fi Setup** selection using the arrow buttons.
 4. Press **Select** to open the **Wi-Fi Setup** menu.
 5. Scroll to the **SSID** selection and press **Select**. A **Wi-Fi Networks** menu appears.
 6. Scroll to the local Wi-Fi network where the SST-W100 will be connected. Press the **Join** button to join this network.
 7. If this network is secured, enter the passphrase for the network.
 - The up/down buttons scroll through the upper and lowercase letters, numbers, and special characters.
 - The < > arrows on the LCD display move to the next character in the passphrase.
- Refer to the table of supported [SSID Guidelines](#) section below.
8. Select **Done** once the passphrase has been entered. The SST-W100 will connect to the Wi-Fi network. A **Wi-Fi Network Status** screen will open displaying the connection information.
 9. The SST-W100 is now connected to the local wireless network. Select **Done** to exit the **Wi-Fi Network Status** screen.
 10. Select **Done** to exit the **Menu Selection** screen.

SSID Guidelines

Savant Wi-Fi products can connect to Wi-Fi networks that meet the following SSID guidelines:

Maximum SSID Length:	32 characters - Firmware 2.13.00 or later 16 characters - Firmware prior to 2.13.00
Maximum Passphrase Length:	WPA/WPA2: 8-63 characters WEP: 10-26 characters

For a list of supported characters, refer to remote sensor section of the [SST-W100 Wireless Thermostat Deployment Guide \(009-0802-xx\)](#).

Additional Information

For additional information on how to program the SST-W100, refer to the following documents which can be found on the Savant Portal

- [SST-W100 Wireless Thermostat Deployment Guide \(009-0802-xx\)](#)
- [Savant Wireless Thermostat User Guide \(009-0957-xx\)](#)

Knowledge Base > Savant Hardware > Climate Control

Regulatory

The following statements are applicable to the SST-W100:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes or modifications of this product, not approved by manufacturer will void the user's authority to operate the equipment.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.